

Amendments to the Specification:

Please amend the Title at page 1, line 1, of the Application as follows:

-- CLEAR FIELD ANNULAR [[TYPE]] EQUAL LINE SPACE PHASE SHIFTING MASK AND METHODS FOR MANUFACTURING THE SAME --

Please amend the Abstract as follows:

-- A mask comprises a mask substrate and at least one annular equal line space phase shifting pattern on [[said]] the mask substrate to produce ~~an opaque~~ a substantially unexposed region on a semiconductor substrate. A method of manufacturing a mask comprises providing a mask substrate; forming a layer of resist material on said substrate; patterning at least one annular equal line space phase shifting pattern on [[said]] the resist layer; patterning [[said]] the resist layer pattern onto said mask substrate; and removing a remaining portion of said resist layer. A method of transferring a pattern onto a semiconductor substrate comprises illuminating a mask comprising at least one annular equal line space phase shifting pattern on the mask to produce ~~an opaque~~ a substantially unexposed region on a semiconductor substrate. --

Please amend Paragraph [0003] of the Specification as follows:

-- To minimize effects of diffraction, various kind of phase shifting masks have been used. Typically, a phase shifting mask has a pattern in the opaque layer, corresponding to the pattern to be formed on the underlying resist. In addition, phase-shifters, which

transmit the incident radiation and shift the phase of the radiation approximately 180 degrees, are added onto the mask to reduce diffraction effects. Alternate aperture phase shifting masks are formed by adding phase-shifters over every other opening. In rim phase shifting masks, phase-shifters are added along or near the outer edges of features. The radiation transmitted through the phase-shifter destructively interferes with radiation transmitted through the feature, thereby reducing the intensity of radiation incident on the resist material underlying the opaque layer near a feature edge [[to]] in order to improve image resolution. --

Please amend Paragraph [0007] of the Specification as follows:

-- To overcome these difficulties, an embedded coating material which integrates the property of obtaining the required 180 degrees phase shift into the substrate coating layer which transmits a reduced percentage of the incident radiation, has been used. An embedded coating material such as molybdenum silicide oxynitride (MoSiOxNy) is used to achieve AttPSM. However, molybdenum silicide oxynitride only provides a low transmittance of about 8 percent. A phase shifting mask which can attain high transmittance and without employing an opaque layer such as chrome is needed. --

Please amend Paragraph [0027] of the Specification as follows:

-- As shown in FIG. 4, a mask 430 with an annular equal line space phase shifting pattern can be illuminated to produce a corresponding dark region on a resist layer 450 in order to pattern the underlying semiconductor substrate 460. In one embodiment, a single point off-axis illumination (OAI) is used in a photolithographic process. Light from a radiation resource is blocked by 420 and can only pass through an aperture 410 to form incident

radiation at an angle 475 away from an axis 425. In other embodiments of off-axis illumination, an annular or quadrupole aperture can be employed to illuminate the mask. By using an off-axis illumination, both the resolution and the depth of focus (~~“DOE”~~) (“DOF”) of a photolithographic process are increased. As a result of using an off-axis illumination, normally after an incident light 470 passes through a feature other than an annular equal line space phase shifting pattern on the mask 430, only 0 order 480 and +1 order 482 of the diffraction resulting from an incident radiation 470 are collected (as opposed to uncollected 484) by a projection lens 440 to form an image on a resist layer 450 which is deposited on a semiconductor substrate 460. --

Please amend Paragraph [0029] of the Specification as follows:

-- As shown in FIG. 5, an integrated circuit design on a semiconductor substrate 505 usually contains a larger interconnect area 510 and thinner interconnect lines 520, 530, 540, 550, 560, and [[to]] 570. A phase shifting mask capable of transferring a pattern containing both large opaque areas 510 and features with critical small dimension 520 to 570 is necessary. As mentioned above, a chromeless phase shifting mask with an annular equal line space phase shifting pattern thereon can be employed to transfer an opaque region onto a semiconductor substrate such as a wafer. Thus, to form a larger interconnect area 510 on a wafer, an annular equal line space phase shifting pattern 605 on a mask comprising annular rings 610, 620 and a central portion 630 as shown in Fig. 6 is used. The annular ring 610 and the central portion 630 are at the same phase, which is approximately 180 degrees different from that of the annular ring 620 and of the mask substrate 600. --

Please amend Paragraph [0030] of the Specification as follows:

-- On the other hand, in order to form equal-line-space interconnect lines 520, 530, and 540 on a semiconductor substrate such as a wafer, corresponding lines 640, 650, [[and]] 660, 670, 680, and 690 on a mask have to be positively biased. Lines 640, 650, [[and]] 660, 670, 680, and 690 are of a phase approximately 180 degrees different from the mask substrate 600.--